



EXTENSION

Seafood Processing Demonstration Laboratory

At a time when the state’s seafood industry is under considerable duress from inflation, global imports, and natural disasters, the new Seafood Processing Demonstration Lab (SPDL) gives fishermen and seafood processors access to commercial food processing equipment for demonstration, training, and research purposes. Product concepts created and developed at SPDL add value to both the fishery and the industry—improving resiliency. SPDL is focused on concept development, the SPDL goal is to help seafood processors at every level—from new businesses to seasoned experts—create new business opportunities.

The SPDL builds upon decades-long field work by LSU AgCenter and Louisiana Sea Grant (LSG) and operates in collaboration with LSU School of Nutrition and Food Sciences. It is modeled on the current AgCenter Food Innovation Institute (FOODii), though the focus is to help develop new seafood product ideas and teach the basics of taking a product to market. Ongoing field work has spurred the development of



the value-added sector of the Louisiana seafood industry, and created demand for information, services, and outreach. SPDF is a logical next step in this process.

The SPDL is located at the LSU AgCenter Iberia Research Station, 603 LSU Bridge Rd., Jeanerette, LA. To learn more about the SPDL visiting <https://www.youtube.com/watch?v=QpVHG3HOdTU>.

A cutting ribbon ceremony was held on July 19, 2022, with over 35 industry, community leaders, and agency administrators attended the event (<https://www.lsuagcenter.com/articles/page1658437663246>). A seafood field day and showcase of the facility was hosted on November 9th, 2022; seafood refrigeration, dressing and cutting, packing, labeling and frozen storage technologies were discussed.

Louisiana Fisheries Forward Summit -Fishing for the Future

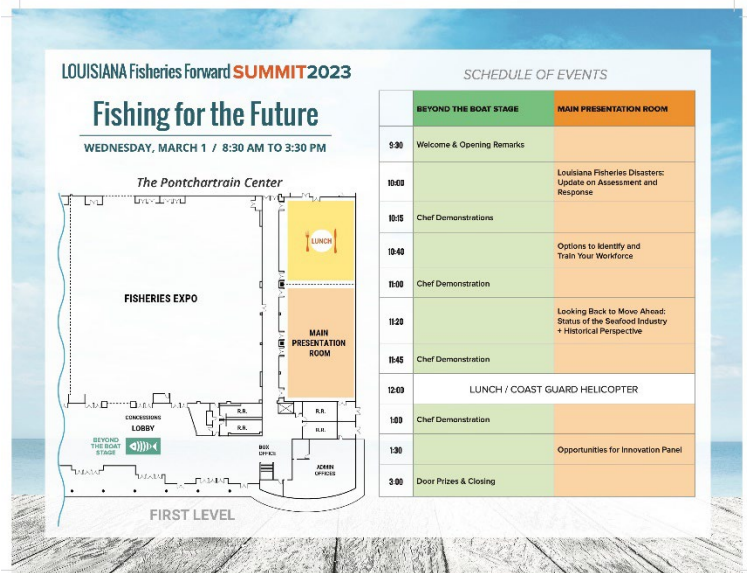
The Louisiana Fisheries Forward Summit is an event for commercial fishermen, dock owners and processors that provides an opportunity to learn about issues facing their industry. The LFF Summit was on Wednesday, March 1, 2023, at the Pontchartrain Center, 4545 Williams Blvd., Kenner. The LFF summit hosted 62 vendors, 4 chef demonstrations, 9 research posters and over \$ 4,700 in door prices; over 330 participants attended the event.

This expo is the state's premier commercial fishing and seafood industry event, attracting hundreds of commercial fishermen, seafood dealers, processors, and others. Panel presentations were run throughout the day, in conjunction with a trade show that featured hands-on demonstrations about safety, innovative handling and processing equipment, gear and techniques. All elements of the Summit are designed to enhance Louisiana's dynamic commercial seafood industry.

The main presentations this year were:

- Louisiana Fisheries Disasters: Update on Assessment and Response
- Options to Identify and Train Your Workforce
- Looking Back to Move Ahead: Status of the Seafood Industry + Historical Perspective
- Keynote Panel: Opportunities for Innovation

The 'Beyond the Boat' pavilion focused on ways to add value to raw seafood and enhance the marketability for harvesters. This includes live chef demonstrations cooking a variety of Louisiana seafood, and an overview of the new Seafood Processing Demonstration Lab (SPDL).



For LFF Summit 2023 recap and presentation recordings visit the Louisiana Fisheries Forward website <https://www.lafisheriesforward.org/louisiana-fisheries-forward-summit-recap/>

Fact sheets and white papers

- **Watts, E.** Best Practices Handling Wild Alligator Meat. Louisiana Fisheries Forward. 2022. Fact sheet. Online: https://www.lafisheriesforward.org/wp-content/uploads/2022/04/LFF_FastFacts_AlligatorHarvest_05.pdf.

Magazine articles

- **Watts, E.** AgCenter Research Supports the Increase of Market Opportunities for Louisiana Seafood Industry. Louisiana Agriculture, 65(2):24-25. Online: https://lsuagcenter.com/~media/system/2/8/1/4/281462a870dc91bc462b9b70791d4bae/vol652_laagmag_spring2022_adafinalpdf.pdf.

Videos

- Seafood Processing Demonstration Lab. LSU AgCenter. February 24, 2023. **Content Expert.** Online: <https://www.youtube.com/watch?v=QpVHG3HODTU>.
- Best Handling Practices for Wild Alligator. Louisiana Fisheries Forward. January 2022. **Content Expert.** Online: https://vimeo.com/698220157?embedded=true&source=vimeo_logo&owner=13138660.
- Catfish Product Label Requirements. Louisiana Fisheries Forward. April 2022. Content Expert. <https://vimeo.com/651571859>.

Upcoming events

AFDO Sanitation Control Procedures (SCP) For Fish and Fishery Products

July 31, 2023
Efferson Hall 212

AFDO Basic Seafood HACCP

August 1-3, 2023
Efferson Hall 212

USDA/FSIS Catfish Compliance Workshop

August 8-10, 2023
Southern University

For more information and registration contact Fatemeh Malekian fatemeh_malekian@suagcenter.com

Curso Básico HACCP para Mariscos y Pescados en español

11 de Septiembre

RESEARCH

The Antimicrobial Effectiveness of Gelatin Film Containing Oregano Essential Oil for preservation of Blue Catfish (*Ictalurus furcatus*)

By Jerica Ledet-Medellin & E. Watts

Active packaging has been a blossoming contender for decreasing spoilage and increasing the shelf-life of fish due to its promising ability to minimize moisture activity. Various types of active packaging have been identified for the extension of shelf-life and food safety of seafood (Bora et al, 2020). Active packaging (AP) changes the condition within packaging and maintains this throughout the entirety of a storage period by incorporating an antimicrobial agent while restricting oxygen from the internal environment (Kazemi & Rezaei, 2015). Active packaging is so favorable due to its low economic constraint, and environmentally friendly materials. An example of active packaging is the use of an edible film or coating.



Jerica Ledet-Medellin. preparing gelatin coating solutions (Photo by Evelyn Watts).

In addition to active packaging for optimal increase of shelf-life, essential oils have become a major compound. Essential oils are organic antimicrobials that can prevent growth within a packaged seafood product. They can be derived from various parts of plants, making them a cost-effective solution. Consumer preference of natural antimicrobials has also influenced the idea of essential oils as substitutes for synthetic antimicrobials (Hussain et al., 2021).

The antimicrobial effectiveness of gelatin coating infused with oregano essential oil was evaluated in the preservation of fresh catfish fillets. Fresh catfish fillets were purchased at a local fishery processor in Breaux Bridge, LA and separated into 4 groups. Fish was treated with fish skin gelatin (G), gelatin and oregano essential oil (GEO, essential oil by itself (EO); and a distilled water control (C). Samples were randomly assigned to the treatments, submerged for 60 seconds, then air dried for 10 minutes and placed in Ziploc bags and stored in refrigeration in ice ($\leq 4^{\circ}\text{C}$). Samples were analyzed at Day 0 and every 4 days thereafter for 20 days. Physical/chemical and microbial activity were analyzed during the study.

The use of a gelatin coating that incorporates oregano essential oil displayed an antimicrobial effect that extended the overall shelf-life of both fresh and previously frozen catfish fillets. Oregano essential oil minimized the growth of microorganisms and inhibited lipid oxidation. In conclusion, the use of a gelatin film infused with oregano essential oil can extend the shelf life of catfish fillets for up to 16 days.



Day 12 of analyzing fresh and never frozen treatment groups. C (top left), G (top right), EO (bottom left), and GEO (bottom right).

This project was funded by Louisiana Sea Grant through the Undergraduate Research Opportunities Program (UROP) 2022).

TEACHING

In the spring 2023 semester, Dr. Watts was invited as guest lecturer for NFS 2000 -Fundamentals of Food Science to talk about Meats and Seafood (90-minute lecture). She was also invited for ANSC 2053 -Food of Animal Origin to lecture about Fish and Shellfish (90-minute lecture), and Seafood Inspection (90-minute lecture), and ANSC 1101 -Introduction to Animal Science to lecture about Food Safety and Consumer Concerns (60-minute lecture).

Evelyn Watts

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LSU AgCenter & LA Sea Grant